

REMARKS

This responds to the Office Action dated January 29, 2003 in the above-captioned application. Claims 3-9, 12-17, and 20-28 are pending. Claims 3, 12 and 20 have been amended. Reconsideration of this application in view of the above amendments and the following remarks is respectfully requested.

In paragraph 2, the Office Action rejected independent claims 3, 12 and 20 pursuant to 35 U.S.C. § 103(a) for allegedly being obvious over U.S. Patent No. 6,005,389 ("the '389 patent") in view of U.S. Patent No. 6,366,088 ("the '088 patent"). In particular, the Office Action alleged that the '389 patent discloses the invention recited in these claims except for the step of time-averaging a signal over two or more different time intervals, while the '088 patent discloses such a time-averaging thus rendering the claims obvious to one of ordinary skill in the art. Independent claim 26 was rejected in paragraph 10 of the Office Action for the reasons set forth in the rejection of claims 3-5 (paragraphs 2-4 of the Office Action). Applicant respectfully traverses.

As a preliminary matter, applicant respectfully submits that the '088 patent to Hagiwara is not available as prior art in this case. In particular, please note that the present application was filed on March 13, 2001. This filing was more than a year before the April 2, 2002 issue date of the '088 patent, which was not published previously and accordingly is not available as prior art under 35 U.S.C. §102(b). Similarly, the '088 patent is not available as reference under 35 U.S.C. §102(e), because it issued to the sole inventor of this application and is assigned to the assignee of this application. (*See* MPEP 706.02(a)). Other sections of 35 U.S.C. 102 or 103 similarly do not apply. Accordingly, it is respectfully submitted that the '088 patent does not qualify as prior art.

Even though the '088 patent is not available as prior art, applicant wishes to point out that contrary to the assertion in the Office Action, this patent does not specifically disclose time-averaging of a signal over two or more different time intervals. In particular, the '088 patent discloses an averaging process where "[a] number of measured points is selected along the time-decay spectrum of the echo train, with a corresponding time window or gate around each point. For example, ten points, or more, or fewer, may be used" (col. 5, ll. 40-42). Then, "a weighted average

of time samples within one or more time windows may be used to characterize the measured echo trains” (col. 4, ll. 58-60). These are the references in the '088 patent describing time-domain averaging. It should be apparent that the '088 patent does not disclose time-averaging the same signal over two or more different time intervals (emphasis added). Therefore, even if the '088 patent had been available as a prior art, a combination with the '389 patent would have still failed to disclose, teach or even suggest the invention in claims 3, 12 and 20 of this application.

As to the '389 patent, the Office Action has acknowledged that this patent does not disclose time-averaging a signal over two or more different time intervals, as recited in claims 3, 12 and 20. Accordingly, the instant claims are patentable over the '389 patent.

Furthermore, it should be pointed that claims 3, 12 and 20 are patentable over the art of record for the additional reason that the claims require time-domain averaging of a single measurement signal, i.e., to perform time-domain average of single-event data. In contrast, the text of the '389 patent relied upon in paragraph 2 of the Office Action (col. 3, lines 32-36, col. 4, lines 3-21; col. 8, lines 12-18 and the corresponding Figures 2, 5 and 8A and 9B) relates to what is referred to in the present application as multi-event stacking. (See for example pg. 6, lines 19-33 and Figure 3 of this application). As discussed in the background section of this application, at pg. 4, lines 28-35, the illustrations in Fig. 3, Fig. 6-7 and their description in this application, taking the time-domain average of single-event data is different from multi-event stacking. Accordingly, applicant respectfully submits that claims 3, 12 and 20 of this application are patentable. Likewise, independent claim 26 is believed patentable, as it recites in step (a) “providing real-time data corresponding to a single-event NMR echo train indicative of physical properties of materials of interest.”

In order to unify the terminology used in the claims and to avoid any possibility of confusion as to the type of recited signals, applicant has amended claims 3, 12 and 20 to recite: (1) claim 3 has been amended to recite in step (a) “providing a time-domain signal indicative of attributes of said materials in a single event measurement”; (2) claim 12 has been amended to recite “constructing a single event time-domain averaged data train from said NMR echo train, the averaging being performed over two or more time intervals Δ_i ”, and (3) claim 20 has been amended to

recite in step (b) "constructing a single event time-domain averaged data train from said NMR echo train, the averaging being performed over two or more time intervals Δ_i , wherein at least two of said two or more time intervals Δ_i are different." Support for the amendments is found in the portions of the specification listed above. No new matter has been added.

The above amendments are made for purposes of clarity and are not believed to affect the patentability of the claim over the cited art or otherwise. Dependent claims 4-9, 13-17, 21-25, and 27-28 depend on and contain all limitations of independent claims 3, 12, 20 and 26. Accordingly, they are believed to be patentable for substantially the same reasons set forth above.

CONCLUSION

In view of the above, applicant respectfully submits that the pending claims 3-9, 12-17, and 20-28 of this application are allowable. An early notice of allowance is earnestly requested to speedily advance the present application.

A petition for extension of time (two months) along with the appropriate fee is enclosed. No other fee is believed to be due for this response. In the event that any fee is required, please charge such a fee or credit any overpayment to Pennie & Edmonds LLP Deposit Account No. 16-1150.

Respectfully submitted,

Oguzhan V. Shentur, R.N. 38,017
for Francis E. Morris 24,615
Francis E. Morris (Reg. No.)

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PENNIE & EDMONDS LLP
1155 Avenue of the Americas
New York, NY 10036
(212) 790-9090